

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003236**Date Inspected:** 29-Jun-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Deck Panel**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mahlon Lindenmuth, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions. While on site the QA Inspector observed and/or discovered the following:

Caltrans QA Inspector,Lindenmuth, monitored the Production Monitoring Tests (PMT)for the OBG Deck Panels U-rib welding. This is the second PMT welded today. The first PMT test did not pass macroetch review. The first PMT was run at 0030 this morning. Prior to performing the welding of the second PMT, ZPMC QC performed Magnetic Particle Testing (MT) of the tack welds located in the root of the PMT. ZPMC QC noted that each weld joint had at least one tack weld that had a linear indication (crack). ZPMC personnel attempted to remove the cracks by grinding but were unsuccessful and eventually elected to replace the PMT ribs with new ones and MT the new ribs tack welds. The new set had tack welds that successfully passed MT testing. The MT was complete at 0830. The welding of the second PMT began at 0932.

The weld joint is a single bevel Partial Joint Penetration (PJP) weld that joins the U-rib to the deck plate. The Production Monitoring Test (PMT) is performed prior to the production of the Deck Panels (DP).

PMT #2 consists of (3) ribs totaling (6) weld joints(wj), numbered wj1 thru wj6. Welding was performed on Gantry 2 and represents production for Deck Panels (DP) DP-249-001 and DP-141-001. Each one is a 5-Rib Panel.

The following is information that pertains to the welding of the PMT #2. Listed below are the WPS,welding

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essential variables,welders and weld joint number. Followed by a short summary:

*WPS: WPS-B-T-2342 (Dual Process GMAW root pass SAW fill and cover pass)

Welding variables minimum maximum range recorded is as follows:

GMAW-Volts:29.8-30.5 Amperage:355-378 Travel Speed:530mmpm

SAW-Volts:24.8-25.2 Amperage:686-695 Travel Speed:525mmpm

Base Metal/Ambient Temperature: 27/28 degrees C

*Weld joint#(wj#)/welder(ID):

wj1-Zhang Shao Hui (059403) wj2-Chen Jie(059468)

wj3-Song Yin Shu (059421) wj4-Xiang Jie (059378)

wj5-Gao xin Dong (059361) wj6-Jing ting Guang (062265)

ZPMC Quality Control (QC) performed visual inspection of the GMAW weld pass and the subsequent SAW weld pass. ZPMC QC noted the GMAW weld pass as acceptable. However, the SAW weld pass was visually rejected, by ZPMC QC, due to underfill and unacceptable undercut on weld joint #3. The area of undercut and underfill measured approximately 115mm in length. ZPMC QC,Sun Wei stated that no further PMTs will be run until after midnight tonight and no production welding of deck panels will occur today.

Gantry 1 was idle during the AM shift.

Summary of Conversations:

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lindenmuth,Mahlon
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Quality Assurance Inspector

Reviewed By:	Cuellar,Robert
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QA Reviewer
